

REMARKS

Claims 1-17 were pending at the time of examination. Attached is a marked-up version of the changes being made by this amendment. Claims 4, 7, 9-11, and 15-17 have been canceled. Claims 1-3, 5, 6, 8, and 12-14 have been amended. Claims 18-21 have been added. No new matter has been added. The applicant respectfully requests reexamination in view of the amended claims and these remarks.

I. The § 112 Rejections

Claims 1-7 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement because the claims recite a “four-point circulator.” The Examiner states that there is no disclosure of how the disclosed or recited structure can be operated to circulate light from a first port to a second port (but not back), from the second port to a third port (but not back), and from the third port to a fourth port (but not back).

Applicant has amended the claims, where applicable, to recite a “circulator” instead of a “four-point circulator.” Claims 4 and 7 have been canceled. Applicant respectfully submits that claims 1-3 and 5-6 as amended are enabled and should be allowable for at least this reason.

II. The § 102 Rejections

The Examiner rejected claims 1, 3, 4, 6-8, and 12 under 35 U.S.C. § 102(b) as being anticipated by Fukushima, and claims 1, 3, 4, 8, and 12 under 35 U.S.C. § 102(b) as being anticipated by Pan. Applicant respectfully traverses the rejection.

Applicant has amended claims 1 and 8 to more precisely recite the methods and apparatus of the invention. In particular, claims 1 and 8 describe the apparatus and methods for performing a first function of the invention. This first function is shown in FIG. 2A and described on a high level in the specification on page 3, lines 16-19, as “light from optical fiber 10 entering circulator 100 with the x-polarization is directed to enter optical fiber 20 with the y-polarization, and light from optical fiber 10 entering circulator 100 with the y-polarization is directed to enter optical fiber 30 with the y-polarization.” That is, incoming light of two different polarizations on a single input port is divided and outputted into two separate output ports with the same polarization.

Applicant respectfully submits that neither Fukushima nor Pan expressly or impliedly teaches a method or apparatus in which incoming light of two different polarizations on the same input port is divided and outputted into two separate output ports with the same polarization. Claims 1 and 8 and any claims depending therefrom should therefore be allowable.

III. The § 103 Rejections

The Examiner rejected claims 2, 5, and 14 under 35 § U.S.C. 103(a) as being unpatentable over Pan. Applicant respectfully traverses the rejection.

Claims 2 and 5 depend from amended claim 1, and are therefore clearly allowable for at least the reasons discussed above for claim 1. Claim 14 depends from amended claim 8, and is therefore clearly allowable for at least the reasons discussed above for claim 8.

IV. Claim Objections

The Examiner objected to claims 9-11, 13, and 15-17 as being dependent upon a rejected base claim, but indicated that these claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants wish to thank the Examiner for this indication of allowability. Claim 8 as amended, contains all the essential limitations of claim 9, which has been canceled. New claim 22 includes the limitations of claims 10 and 11. Claim 13 has been amended to depend from claim 8. Claims 15-17 have been canceled. Thus, amended claim 8 contains subject matter that was indicated to be allowable, and claim 8 and all the claims depending therefrom should therefore be allowable for at least this additional reason.

V. Specification Objections

The Examiner objected to the specification because of "fiber 30" should read "fiber 20" on page 4, line 3. As can be seen above in the specification section, Applicant has corrected this informality, and the specification should now be in allowable condition. Applicant has also corrected some minor typographical errors in the specification.

VI. Final remarks

The new claims 18-21 describe a second function of Applicant's structure. This second function is shown in FIG. 2B and described on a high level in the specification on page 3, lines 20-24, as "light from optical fiber 20 entering circulator 100 with the y-polarization is directed to enter optical fiber 40 with the y-polarization, and light from optical fiber 30 entering circulator 100 with the y-polarization is directed to enter optical fiber 40 with the x-polarization." That is, incoming light of a single polarization on two different input ports is merged and outputted into a single output port with two different polarizations.

Applicant respectfully submits that neither Fukushima nor Pan expressly or impliedly teaches a method or apparatus for processing incoming light of a single polarization on two different input ports, merge the two incoming light components, and output the merged light into a single output port with two different polarizations. Claims 18 and any claims depending therefrom should therefore be allowable over Fukushima and Pan, alone or in combination.

Please apply any charges or credits to deposit account 06-1050.

Respectfully submitted,

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Fredrik Molborn
Reg. No. 48,587

Fish & Richardson P.C.
500 Arguello Street, Suite 500
Redwood City, California 94063
Telephone: (650) 839-5070
Facsimile: (650) 839-5071